IN THE CLAIMS:

Claim 1 (currently amended): A process for refining raw copper material containing copper sulfide mineral characterized by a hydrometallurgical process for recovering copper and a concomitant valuable metal from a raw copper material containing a copper sulfide mineral, comprising:

(1) a chlorine-aided leaching step for leaching the raw copper material in the presence of chlorine in an acidic, aqueous chloride solution to produce the leaching product liquor containing the copper ion and residue containing elemental sulfur by leaching copper in the acidic solution, said chlorine-aided leaching step being effected by continuously blowing chlorine gas into said acidic, aqueous chloride solution and at a slurry concentration of 100 to 400g/L, leaching temperature of 100 to 110°C and oxidation-reduction potential of 500 to 600mV (based on an Ag/AgCl electrode), said chlorine-aided leaching step being controlled to have a final chloride ion concentration of 250 to 400g/L in the acidic, aqueous chloride solution,

(2) a copper ion reduction step for reducing the leaching product liquor in the presence of a reductant to produce the reduction product liquor containing the cuprous ion, wherein said copper ion reduction step uses the copper sulfide mineral as the reductant; said copper sulfide mineral is treated under heating at the atmospheric pressure in the leaching product liquor to produce the reduction product liquor and residue containing elemental sulfur; said copper sulfide mineral is a copper concentrate mainly composed of chalcopyrite, prepared to have an average particle diameter (D50) of 0.5 to 60μm, and temperature at which the leaching product liquor is reduced is 90 to 110°C and, at the same time, is at least the temperature level (A) given by the following formula 1:

$$\text{Formula 1: } A(^\circ C) = 6.79 \times \text{Ln}(B) + 81.5$$

(wherein, B is an average particle diameter (D50, μm), determined by the Microtrac analyzer, at a volumetric cumulative frequency of 50% of the copper concentrate), and an oxidation reduction potential for step (2) is 0 to 400 mV; said residue containing elemental sulfur being recycled back as a raw copper material to the chlorine-aided leaching step.

(3) a solvent extraction step for extracting copper with the aid of an organic solvent containing 40% by volume or more of a solvating extractant from the reduction product liquor, and stripping loaded solvent with an aqueous solution containing copper at 70g/L or less and chlorine ion at 50 to 350g/L at 40 to 90°C to produce the stripping product liquor containing the cuprous ion and raffinate containing the ferrous ion,

(4) a copper electrowinning step for electrolyzing the stripping product liquor to produce the electrolytic copper and spent electrolyte, and

(5) an iron electrowinning step for electrolyzing the raffinate to produce the electrolytic iron and iron spent electrolyte composed of the aqueous iron chloride solution,

wherein said copper electrowinning step is effected in an electrolysis tank composed of a cathode chamber and anode chamber separated from each other by a diaphragm, water permeates through said diaphragm at 0.04 to 0.15L/m^2●s, characterized in that said stripping product liquor containing the cuprous ion, discharged from said solvent extraction step, is supplied to the cathode chamber to electrowin copper on the cathode, said iron spent electrolyte composed of an aqueous iron chloride solution, discharged from said iron electrowinning step, is supplied to the anode chamber for anodic oxidation, and the solution being supplied to the anode chamber is prevented from flowing into the cathode chamber through the diaphragm, and

wherein said cathode and anode chambers in said electrolysis tank are structured in such a way that a solution is charged and discharged separately in each chamber, and the solution level is kept higher in said cathode chamber than in said anode chamber, and

wherein the spent catholyte is recycled back as the aqueous solution for stripping to said solvent extraction step, and the spent anolyte is recycled back as the leachate to said chlorine-aided leaching step.

Claim 2 (canceled):

Claim 3 (canceled):

Claim 4 (canceled):

Claim 5 (canceled):

Claim 6 (canceled):

Claim 7 (canceled):

Claim 8 (canceled):

Claim 9 (canceled):

Claim 10 (canceled):

Claim 11 (canceled):

Claim 12 (canceled):

Claim 13 (canceled):

Claim 14 (canceled):

Claim 15 (canceled):

Claim 16 (canceled):

Claim 17 (canceled):

Claim 18 (original): The process according to Claim 1 for refining a raw copper material containing a copper sulfide mineral, wherein said iron electrowinning step is effected in an electrolysis tank composed of an anode chamber and cathode chamber separated from each other by a filter cloth, characterized in that the iron ion is supplied to the anode chamber at a rate at least twice as high as that for the iron ion deposited on the cathode in order to decrease cell voltage.

Claim 19 (original): The process according to Claim 1 for refining a raw copper material containing a copper sulfide mineral, wherein a solution purification step is included upstream of said iron electrowinning step to purify said raffinate from said solvent extraction step, which produces the purified solution and precipitate product.

Claim 20 (original): The process according to Claim 19 for refining a raw copper material containing a copper sulfide mineral, wherein said raffinate from said solvent extraction step is purified in said solution purification step by a treatment method selected from the group consisting of sulfidation, cementation and neutralization.

Claim 21 (original): The process according to Claim 1 for refining a raw copper material containing a copper sulfide mineral, wherein said residue containing elemental sulfur, discharged from said chlorine-aided leaching step, is distilled in an inert atmosphere to be separated into the condensed sulfur and residue containing a concomitant precious metal, after evaporating sulfur.

Claim 22 (original): The process according to Claim 1 for refining a raw copper material containing a copper sulfide mineral, wherein said electrolytic copper produced in said copper electrowinning step is used as the anode to be refined by electrolysis and separated into the high-purity, electrolytic copper and silver-containing slime.